Therefore, further research could focus on developing new indexes in the Tower test and finding the EF mechanism of ASD children with different approaches.

Categories: Autism Spectrum Disorders/Developmental Disorders/Intellectual Disability
Keyword 1: assessment
Keyword 2: child development disorders
Keyword 3: inhibitory control
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12 Does Executive Functioning Predict Diagnostic Timing of Autism?

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Objective: Executive functioning (EF) is impaired in autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD), and EF challenges are exacerbated in youth with ASD and ADHD (ASD+ADHD), which may impact diagnostic timing. We hypothesized youth with ASD+ADHD would be more impaired in EF (as opposed to other functional domains) compared to autistic youth without ADHD (ASD-only), with particular deficits in metacognition and inhibition. We also predicted youth with ASD+ADHD would be at significant risk for delayed ASD diagnosis and that greater EF challenges would predict earlier age of ASD diagnosis across groups.
Participants and Methods: Data from a clinical database was extracted for 400 youth who received a new diagnosis of ASD after age 5, either with a co-occurring diagnosis of ADHD (ASD+ADHD group: n=297; Mage of ASD diagnosis=10.49; 25.9% female; 48.1% white) or without a co-occurring ADHD diagnosis (ASD-only group: n=100; Mage of ASD diagnosis=12.02; 34.0% female; 44.7% white). EF was measured with the BRIEF-2 parent-report, and ASD symptom strength was measured with the SRS-2 School Age form. Independent samples t-tests investigated whether a) the ASD+ADHD group was uniquely impaired in EF compared to the ASD-only group, b) parents of ASD+ADHD report elevated EF problems, and c) the ASD+ADHD group was at significant risk for delayed ASD diagnosis. Pearson correlations examined the association between age of ASD diagnosis and EF for each diagnostic group. Hierarchical linear regressions further analyzed whether specific EF domains concurrently predicted age of ASD diagnosis, after controlling for the known predictors of assigned sex at birth, FSIQ, and ASD symptom strength.
Results: The ASD+ADHD group had greater challenges in overall EF (t=-6.42, p<.001), metacognitive skills (t=-6.47, p <.001), and inhibition skills (t=-7.06, p<.001). There was no significant difference in parent-reported autism symptoms between the ASD and ASD+ADHD groups (t=0.973, p=.331). The ASD+ADHD group received ASD diagnoses earlier than the ASD-only group (t=4.194, p<.001). In the ASD-only group, age of ASD diagnosis was not significantly correlated to overall EF, metacognitive skills, nor inhibition skills (ps>.05). In the ASD+ADHD group, ASD diagnosis was significantly related to overall EF (r(297)=.128, p=.027) and metacognitive skills (r(297)=.329, p<.001) but not inhibition skills (r(297)=.078, p=.180). Hierarchical linear regressions controlling for assigned sex at birth, FSIQ, and SRS-2 T-scores were used to determine whether these EF components significantly predicted age of ASD diagnosis. Overall EF did not predict age of ASD diagnosis in the ASD+ADHD group (β=.034, t=1.417, p=.157), but metacognitive skills did (β=.123, t=5.582, p<.001).
Conclusions: Our findings suggest youth with ASD+ADHD have greater impairment in overall EF, metacognition, and inhibition compared to ASD-only youth, despite similar levels of ASD traits, consistent with hypotheses. Contrary to our hypothesis, youth with ASD+ADHD in this sample were diagnosed with ASD earlier. However, results also suggest EF problems, specifically metacognitive deficits, predict later age of ASD diagnosis. Future research is needed to replicate findings and better understand how EF and other functional domains predict ASD diagnostic timing.

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Keyword 3: attention deficit hyperactivity disorder
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13 Verbal Memory and Learning Strategies in an Autistic Sample Using the CVLT

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Objective: The present study aims to better understand learning strategies and difficulties in autistic youth. Previous studies have found that autistic youth have difficulties with executive function skills and poorer performance in memory and learning tasks, especially those that require spontaneous retrieval of information compared to memory tasks that provide external retrieval cues. Additionally, it has been theorized that autistic youth employ a serial approach rather than a semantic approach to learning. The current study hypothesized that the autistic sample will have (a) significant difficulties in learning and memory, (b) employ a serial approach more frequently and a semantic approach less frequently than the CVLT normative sample, and (c) will benefit significantly when provided with external retrieval cues.
Participants and Methods: Archival data from a mixed clinical and research database were examined for this study. Participants include 740 autistic individuals between the ages of 5.50 and 24.3 (M = 10.90, SD = 2.98). The sample consisted of 22.2% girls and 34.0% Black, Indigenous, and people of color (BIPOC). All individuals had a FSIQ ≥ 70 (M = 99.91, SD = 16.09) and were clinically diagnosed with autism using DSM-IV-TR or DSM-V criteria by a clinician at an autism diagnostic center. Participants completed the age-appropriate California Verbal Learning Test (CVLT, Delis et al. 1987) which is a neuropsychological measure that examines verbal memory and learning. One-sample t-tests were used to examine the sample's verbal memory abilities and their learning strategies. A paired sample t-test was used to evaluate the sample's performance before and after an external retrieval cue was given.
Results: Results from the one-sample t-tests indicate that the autistic sample performed worse than the CVLT normative data with a large effect size ($t(739) = -9.440$, $p < .001$, Cohen's $d = 1.292$). Secondly, the autistic sample was less likely to use a semantic learning approach ($t(739) = -1.841$, $p = .033$, Cohen's $d = 1.234$), but not more likely to use a serial approach ($t(739) = -.040$, $p = .484$) compared to the normative sample. Lastly, the paired sample t-test results show that the sample performed significantly better after receiving the external retrieval cue ($t(739) = -2.570$, $p = .005$, Cohen's $d = .770$).
Conclusions: The data supported the first hypothesis; autistic individuals have increased difficulties with learning and verbal memory. However, the data only partially support the second hypothesis. The sample was less likely to use a semantic approach to learning but was not more likely to use serial learning. This finding is opposed to the Weak Central Coherence (WCC) theory, which suggests that autistic individuals are more likely to have detail-oriented, bottom-up cognitive thinking styles, consistent with a serial learning strategy. Lastly, data showed improvement when autistic individuals received a retrieval cue. This result supports the Task Support Hypothesis (TSH) and indicates that autistic individuals benefit from cues for memory recall, particularly those that capitalize on their areas of strength. This study did not use a control group and is limited in ethno-racial diversity; therefore, these are preliminarily findings that require further replication.

Categories: Autism Spectrum Disorders/Developmental Disorders/Intellectual Disability
Keyword 1: learning
Keyword 2: autism spectrum disorder
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14 Changes in Service Delivery Models for Children with Neurodevelopmental Disorders During the Covid-19 Pandemic

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